DOCUMENT RESUME

ED 148 637 SE 023 789

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TITLE Field Test of the Building Adoption Climate Profile (BACPRO). Research Paper No. 20.
INSTITUTION Minnesota Univ., Minneapolis. Coll. of Education.
SPONS AGENCY National Science Foundation, Washington, D.C.
PUB DATE 31 Oct 75
GRANT NSF-GW-6800
NOTE 30p.; For related documents, see SE 023 784-792

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Curriculum Research; Educational Research; *Information Utilization; *Mathematical Models; *Mathematics Education; *Measurement Instruments; *Models; *Science Education; Statistical Analysis; Tests
IDENTIFIERS Building Adoption Climate Profile

ABSTRACT

A communication model suggests that in almost all cases where dissemination and utilization of knowledge has taken place, one or more of seven general factors can be identified as having been active in aiding the phenomena. The proposed factors are: linkage, structure, capacity, openess, reward, proximity, and synergy. In order to use this model to investigate the ability of the National Science Foundation (NSF) to communicate its mathematics and science curricula to the nation's classrooms, the BACPRO was developed. The BACPRO is a self-report instrument to be completed by principals and teachers. Items are divided into seven subscales relating to the seven factors of the model. A pilot test was conducted among principals of the Chicago City School System followed by a field test among secondary school principals and mathematics teachers in Wisconsin. (BB)

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funded by the national science foundation

SE 023 789

RESEARCH PAPER #20

Field Test of the Building Adoption Climate Profile (BACPRO)

William H. Ward, Jr.
October 31, 1975

This study was supported by Grant GW-6800 from the National Science Foundation to the University of Minnesota; Wayne W. Welch, Project Director.

Field Test of the Building Adoption Climate Profile (BACPRO)

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Background

Ronald Havelock and others (1969,1971) have proposed that, in almost all cases where dissemination and utilization (D & U) of knowledge has taken place, one or more of seven general factors can be identified as having been active in aiding or facilitating the phenomena. The 1971 paper goes so far as to refer to these as "Seven major factors which *predict* successful innovation" (1971, p. 18, italics added). The proposed factors are: linkage, structure, capacity, openness, reward, proximity, and synergy.

It is useful to conceptualize the D & U process in terms of the traditional communication paradigm shown below:

One may attempt to characterize the four elements of the process--sender, receiver, channel, and message--along the seven proposed dimensions. It would then be possible to assign to any particular instance of potential D & U (attempted communication) a set of 28 values, each indicating the status of one of the four communication elements relative to one of the seven D & U factors. By placing constraints on one or more of the communication elements, that is, by defining a limited class of communications to be attempted, it would appear the possibility exists of studying potential relationships

between status on one or more of the D & U factors and success in the intended communication for that limited class.

In the present study, the class of communications was defined as the attempts by the National Science Foundation (the sender) to communicate its science and mathematics curricula (the message) to the nation's classrooms (the receiver) via any and all means (the channel). Successful communication was defined as use of the curricula. The present study further restricted itself by considering only the status of the RECEIVER relative to the seven D & U factors. Its focus was thus to address the questions:

(1) Is the status of the RECEIVER on any or all of the D & U factors discernibly related to the degree to which it utilizes NSF developed curricula?

(2) If yes to (1), how might the relationship be described?

The BACPRO

The exact identity of the RECEIVER was at first uncertain. Nominated were, among others, the individual classroom instructor, a committee of teachers within the school, the principal, and the local school board. A study conducted during the fall of 1974 (Ward, 1975-a) indicated most adoption and use decisions were made at either the individual teacher or the building level, depending on the particular school. It was decided to conduct two parallel studies, one conceptualizing the individual teacher as the RECEIVER, and a second conceptualizing the school building (i.e., its organizational and operational procedures and the general characteristics and attitudes exhibited across all relevant staff) as the RECEIVER. The remainder of this report pertains to the second (Building = RECEIVER) study.

A method was needed to assess the status of a building relative to the seven D & U factors. The Building Adoption Climate PROfile (BACPRO) was developed for this purpose. The BACPRO is a self-report instrument to be completed by a member of the building professional staff. Items are divided into seven subscales, each yielding by direct summation a value intended to reflect the status of the particular building on one of the D & U factors. Also yielded is information on the use in the building of the various NSF supported curricula. The instrument was developed in two forms--Form E for elementary buildings, and Form S for secondary.

The subscales and the items comprising them were developed as follows. The Havelock definitions for each factor were studied. These general definitions were then made specific to the situation by generating logically a set of exemplars, each of which was thought to indicate strength of a building relative to one of the D & U factors. These sets were reviewed by a variety of professional educators and revised, finally resulting in seven sets assumed to be valid indicators of a school's status on the seven D & U factors when the building as an organization is conceptualized as the RECEIVER for an NSF curriculum MESSAGE. Items were developed directly from the final sets of exemplars. These final sets are shown in Exhibit 1.

Reliability of the BACPRO

The reliability of the values yielded for the seven subscales must be sufficient to allow use of the values for further analysis. If the score profile for a given building is similar across several different raters, the contention that the scores correspond to quantities intrinsic

EXHIBIT 1. Exemplars (in condensed form) For User System Defined as the Individual Building.

Linkage

Administrators - Colleges and Universities
- Professional associations dealing with curricula
- In-service curriculum training programs
- Administrators in other districts
- Commercial (publishers') curriculum specialists

Teachers - [same list as "Administrators" above]
Administrators - Administrators
Teachers - Teachers
Administrators - Teachers
Administrators - Community
Teachers - Community

Structure

Organization chain of authority
Built-in review procedure
Objectives defined at class level
Coordination between teachers and between departments
Teachers' responsibilities defined

Openness

Acceptance of outside ideas (receptiveness ?)
Reaching for outside ideas
Willingness to take risk
Willingness to adapt ideas to local situation
Internal openness to change (from within)

Capacity

Physical plant
Administrative structure
Financial resources
Faculty
Community
Students

Reward

Attitude toward reward to students from past adoptions
Attitude toward potential reward to students from future adoptions
Attitude toward reward to faculty from past adoptions
Attitude toward potential reward to faculty from future adoptions

Proximity

Nearness to permanent resources
Nearness to temporary resources
Nearness to neighboring districts
Psychological proximity

Synergy

Sources of contact with NSF message
Diversity of sources and intensity from each source

to the building is strengthened. An appropriate index for examination is the intraclass correlation coefficient (Hays, 1973, p. 535; Winer, 1971, p. 287). This statistic is based on the ratio of between-school variance to between-rater variance and indicates both the extent to which raters of the same building respond similarly and the extent to which the subscale discriminates between buildings.

The internal consistency of each subscale, the degree to which items tend to be answered similarly by a particular rater, is also of interest. A high degree of internal consistency in a subscale would indicate the items are tapping some definite entity, either a true generalization of the building climate or a well-developed construct in the mind of the rater. An appropriate statistic for examination is Cronbach's coefficient α (Lord & Novick, 1968, p. 87).

Methods of Searching for Order in the Data

Two possible deterministic classes of relationships between D & U factor scores and use were proposed, linear compensatory relationships and threshold relationships (Ward, 1975-b). The former suggests that a building's degree of use of the relevant curricula may be predicted from a linear combination of its D & U factor scores. It is compensatory in the sense that weakness in one area can be fully compensated for by strength in another. A threshold relationship postulates that use will not be observed unless a building possesses a status in excess of some value for a particular D & U factor, a threshold value. Were this strictly true, a plot of use rate vs. status on the D & U factor under consideration would result in no use prior to some value and a distinguishable increase when that value had been passed.

The mode of analysis for compensatory relationships was defined as multiple linear regression with use rate (use) as the dependent variable and the status scores on the seven D & U factors as independent variables. Use rate, often referred to in this report simply as use, was defined as:

$$\text{Use Rate} = \frac{\text{Number of students using NSF curricula weighted by reported degree of use}}{\text{Student population of building}}$$

Linkage, structure, capacity, openness, reward, and proximity scores were defined as the simple sum of responses to appropriate items. Synergy, the intensity with which the NSF message fell upon the building, was defined alternatively as (1) the absolute number of contacts of building people with the message, (2) the absolute number of contacts divided by the size of the building's certified teaching staff, and (3) the absolute number of contacts divided by the size of the building's total instructional staff, resulting in three slightly different sets of independent variables to be investigated. Evidence that a meaningful compensatory linear relationship did exist was defined as the generation of a prediction equation yielding a regression F sufficiently large to satisfy the criteria of Draper and Smith (1966, p. 64).

The mode of analysis for threshold relationships was defined as visual inspection. Plots of use rate vs. each D & U factor were to be visually examined for evidence of thresholding. Evidence that a threshold relationship did exist was defined to be the detection of thresholding on one or more factors.

A somewhat looser, and perhaps more realistic, interpretation of the Havelock proposition is to regard it as a proposal for a necessary but not sufficient (NBNS) condition for innovation. For the situation at hand, this may be paraphrased as, "For use to take place, strength must be present on at least one of the factors. It is not necessary that it be the same factor in each case, nor is it expected that strength will always or even usually lead to use. It is expected, however, that without strength somewhere use is quite unlikely."

A test of this formulation was made by considering only users. A null hypothesis was posed that use is independent of relative status on D & U factors. In this case, the likelihood of various proportions of schools in the user group rating highly on one or more D & U factors may be obtained by considering the appropriate binomial distribution.

High use and high status relative to a factor were defined as being in the upper 25% of the appropriate distribution. Criterion for rejection of the null hypothesis and acceptance of its alternative, that major strength on some (any) factor is a necessary but not sufficient condition for use, was defined as a proportion of buildings in the high use group also exhibiting high status on at least one D & U factor having a probability of less than .1 under the null hypothesis.

Pilot Test - Chicago

During June 1975, a pilot test of Form E (elementary) was conducted among principals of the Chicago City School System. Sample and results were:

Sample:

Instruments sent	50	
Instruments returned	15	
Return rate	30%	(15/50)
Returned but unusable	0	
Final sample N	15	

Results:

Reliability

Intraclass correlation coefficients

No multiple measures on buildings

Internal consistency coefficients

synergy	.43
linkage	.76
structure	.51
capacity	.74
openness	.24
reward	.50
proximity	.71

Relationships

Compensatory linear relationship

A multiple regression equation using six of the seven scales as independent variables was constructed which yielded an R^2 of .74. The regression F, however, was not sufficiently large to regard the equation as a satisfactory predictor indicating that the bulk of the relationship was probably an artifact of the low ratio between the number of cases and the number of independent variables.

Threshold Relationship

No thresholding was detected.

Facilitating Relationship

Due to the small sample size, the top third (n=5) rather than the top quarter by use were examined. Two of these were also in the top third on all seven factors, one on six factors, and one on five. The fifth was in the top third on none of the D & U factors. The small sample size precluded meaningful judgements based on the probability of these outcomes under the hypothesis of no association.

The implications of the results of the Chicago pilot test were unclear, but were sufficiently encouraging to justify, after some revision of the instrument, a field test of greater scope.

Field Test - Wisconsin

During October 1975, a field test of Form S (secondary) was conducted among secondary schools randomly selected from the Wisconsin Public School Directory. This was a larger effort than the pilot test in Chicago and included an expanded attempt to assess instrumental reliability by requesting multiple ratings on a portion of the buildings.

Sample:

Instruments Sent	
Building principal only (one measurement per building)	166
Building principal and three	41
science or mathematics teachers (four measurements per building)	123
	330
Instruments Returned	
From principal only buildings	64
From multiple measurement buildings	
Principal only	5
Principal, 1 teacher	12
Principal, 2 teachers	12
Principal, 3 teachers	4
1 Teacher	9
2 Teachers	10
3 Teachers	9
	125

Return Rate

Building-wise (at least 1)	43% (90/207)
Instrument-wise	38% (125/330)
Returned but Unusable	9

Final Sample N

Principals	72
Buildings with multiple responses	19
Instruments	116

Results:

Reliability

Intraclass correlations

	19 Buildings
synergy	.20
linkage	<.01
structure	.56
capacity	.42
openness	.14
reward	.12
proximity	.41

Internal consistency coefficients

	72 Principals	44 Teachers
synergy	.83	.69
linkage	.88	.93
structure	.62	.78
capacity	.80	.80
openness	.34	.49
reward	.62	.59
proximity	.62	.47

Relationships

Compensatory linear relationship

No satisfactory multiple regression equation could be constructed. The closest approach, hardly close at all, was made by considering only data from principals (n=72) and defining synergy as # contacts/certified staff. This equation, which contained all scales except openness, yielded an R^2 of only .101 and a regression F of 1.22, far below the criterion for a satisfactory predictive equation.

Threshold relationship

Plots of use rates vs. status scores on the D & U factors were constructed for principal scores teacher scores, and mean scores for buildings. No thresholding was discernible.

Facilitating relationship

Data from principals only was used in this analysis (N=72).

The 25% reporting highest use rates (N=18) were identified and separated for examination, and the 75th percentile of each of the factor score distributions was determined.

The number of cases among the 18 buildings highest in use also exhibiting a factor score in the upper quarter of the appropriate factor score distribution were:

synergy	7
linkage	5
structure	7
capacity	8
openness	6
reward	5
proximity	11

All 18 cases exhibit a factor score in the upper quarter on one or more factors. This outcome has a probability of less than .08 under the null hypothesis of independence of use and factor scores.

Conclusions and Comments

(1) The quantitative values yielded by the BACPRO when completed by an arbitrary sample of buildings' teachers and/or administrators cannot be regarded as reliable and valid direct indications of the status of the building relative to the Havelock D & U factors.

The reliability analysis following the Wisconsin trial clearly indicates that the instrument does not yield consistent data when used by different observers theoretically rating the same phenomenon. When all

observations on a building were considered, the mean within-building variance was on the same order as the between-building variance on the synergy, linkage, openness, and reward scales.

(2) The quantitative values yielded by the BACPRO may be reliable indications of the status of a building relative to the Havelock D & U factors as perceived by a certain observer.

The magnitudes of the internal consistency coefficients for both principals and teachers indicate the D & U factors may be more than simply labels for relatively independent collections of exemplars. It is possible that the collection of items on any particular scale may be recognizable to the rater as all thrusting toward a single generalization, for example the openness of the building climate. If this is so, and if it is a generalization he has formed prior perceptions of, a rater may easily be conceived of as unconsciously altering objective reality to conform more closely to his perception. In this way identical objective data may be reported differentially by two observers with each having a high reliability. The apparent contradiction disappears when the reports are regarded as measures of the rater's perception of some underlying attribute rather than direct measures of the status of the school building.

A principal's and his teachers' perceptions may differ because they are processing inputs differently, they are looking at different things, or both. One would expect most teachers to have a more limited perspective than their principal from which to make judgments relative to the entire building. Likewise, one might expect a principal to be generally more skillful in forming assessments of the type required by the instrument. Whatever the reason, recent studies (Reineke & Welch,

1973; Ward, 1975) have indicated that principals and teachers do often perceive relatively objective facts about their school quite differently.

In view of the above, it appears reasonable to ask "Are the building principal's perceptions of the building's status on the D & U factors related to curricula use?" and "If so, how?" The search for order thus concentrated on the responses of the 72 principals.

(3) Evidence was not found that principals' perceptions of their building's status relative to the Havelock D & U factors are related in any major degree to their building's use rate of NSF curricula as hypothesized in a compensatory model, such model being operationalized in the form of multiple linear regression.

(4) Evidence was not found that principals' perceptions of their building's status relative to the Havelock D & U factors are related to their building's use rate of NSF curricula as hypothesized in a threshold model.

(5) Principals' perceptions of their building's status relative to the Havelock D & U factors <u>may</u> be related to their building's use rate by the "necessary but not sufficient" model. Principals who reported use rates in the upper quarter of the sample also perceived their building in the upper quarter relative to at least one D & U factor at a level highly unlikely due to chance alone.

This view may represent the best and most realistic interpretation of the Havelock factors, that they are facilitators rather than determinants of change, diffusion, and utilization. The presence of strength on one or

more of these factors in a given situation may not ensure that the desired result will occur, but lack of strength on all will make the desired result much less likely to occur.

(6) The factors most powerful as facilitators of usage of NSF curricula appear to be proximity (both physical and psychological closeness between the building and workshops, curriculum specialists, universities, and other school districts) and capacity (physical, financial, and human).

This is an extension of conclusion (5). Strength on these two factors appears most frequently, 11 and 8 times respectively, among the upper quarter of users. Such rates of occurrence, were only that single factor being considered, would have probabilities of .0013 and .0570 under the hypothesis of independence.

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APPENDIX

Final Exemplars of D & U Factors

BACPRO - Form E

BACPRO - Form S

Subscale Key

BUILDING CLIMATE INVENTORY*
FORM E

Please circle the number or fill in the blank on the response sheet to indicate your response to each item.

Item #

1. Your Position: 1 = principal 2 = teacher 3 = other
2. Student Population (approximate) of Your Building
3. Number of Certified Teachers in Your Building
4. Grades in the Building
5. Average Teacher Turnover Per Year:

   1 = less than 10% 2 = 10-25% 3 = 25-50% 4 = greater than 50%

Please indicate the level of use of each of the following in Your Building:

1 = no use 2 = slight use 3 = moderate use 4 = high use

6. School Mathematics Study Group (SMSG) materials
7. Unified Science and Mathematics for Elementary Schools (USMES)
8. Elementary School Science (ESS)
9. Science Curriculum Improvement Study (SCIS)
10. Science - A Process Approach (SAPA), the program of AAAS
11. Man: A Course of Study (MACOS)

Following are several means by which members of your building staff may have come in contact with one of the programs listed above. Please estimate the number of different people from your building who have come in contact with <u>any</u> of the programs by each of the following means.

12. College teacher training
13. National Science Foundation institutes
14. Short workshops (4 days or less)
15. Professional association meetings
16. Employment in another school
17. Professional literature
18. Access to tests and materials

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All items call for your assessment of the conditions in your building or the opinions held by the building teaching and administrative staffs. ON QUESTIONS OF OPINION, PLEASE GIVE YOUR ESTIMATION OF THE GENERAL, BUILDING-WIDE VIEWPOINT, EVEN IF IT DOES NOT MATCH YOUR OWN PERSONAL OPINION.

Please describe the amount of contact and interaction between or among the groups as indicated. Use the scale 1 - 5:

Virtually no contact or interaction	1	2	3	4	5	High degree of contact and interaction

19. Between building administrators and college or university curriculum specialists

20. Between building administrators and professional associations dealing with curriculum

21. Between building administrators and administrators of other buildings

22. Between building administrators and in-service programs

23. Between building administrators and commercial (e.g. publishers') curriculum specialists

24. Between building teachers and college or university curriculum specialists

25. Between building teachers and professional associations dealing with curriculum

26. Between building teachers and teachers in other buildings

27. Between building teachers and in-service programs

28. Between building teachers and commercial (e.g. publishers') curriculum specialists

29. Among building administrators

30. Among building teachers

31. Between administrators and teachers within the building

32. Between administrators and the community

33. Between teachers and the community

Please indicate to what degree the following statements characterize your building. Use the scale:

Not at all characteristic	1	2	3	4	5	Highly characteristic

34. There is a well defined "chain of authority" through which most intra-staff business is conducted.

35. Direct supervision of a staff member by his/her supervisor on a day to day basis is common.

36. Most subjects have explicit, well defined objectives which serve as the basis for planning instruction.

37. All curricula taught are subjected to pre-planned review and evaluation at regular intervals.

38. Teachers plan and carry out their instructional programs relatively independently of others teaching the same level.

39. Teachers of one grade level work closely with those of other grade levels to interlock and correlate their respective programs.

40. The extents and limits of individual teachers' responsibilities to the building and district are extensively defined in writing.

Assuming a major curriculum change had been deemed desirable, please evaluate the <u>capacity</u>, on an average over the past five years, that your building would have had for receiving the change along the following dimensions. Use the scale:

Low capacity, many inhibitors	1	2	3	4	5	High capacity, few inhibitors

41. Physical plant (room size, utilities, storage space, etc.)

42. Administrative structure (class grouping, contractual obligations, state curricula, etc.)

43. Financial resources

44. Faculty

45. Students

46. Community support

---

47. When major new curriculum materials are to be chosen, which best describes the selection process as it operates in your situation:

1 = Selection by teachers with little administrator input
2 = Selection by teachers with considerable administrator input
3 = Selection jointly by teachers and administrators, roughly equal input
4 = Selection by administrators with considerable teacher input
5 = Selection by administrators with little teacher input

Please describe the degree to which you feel the following statements reflect the general OPINIONS AND ATTITUDES OF YOUR BUILDING STAFF. Use the scale:

Does not reflect building opinion	1	2	3	4	5	Reflects building opinion

48. Outside ideas on curriculum are often extremely important in improving the school's program.

49. It is the school's responsibility to actively seek outside ideas on curriculum.

50. The school should be willing to take a fair degree of risk to improve its curriculum.

51. Any major "curriculum package" should be used as is and not modified at the local level.

52. A school can often significantly improve its curricula by using internal resources and does not have to rely on external assistance.

53. Most outside curriculum specialists who come in contact with school staff have a highly realistic understanding of the school's capabilities, objectives, and limitations.

54. When past major curriculum adoptions are considered, on the whole the benefits and improvements realized by the students far outweighed the costs and problems.

55. When past major curriculum adoptions are considered, on the whole the benefits and improvements realized by the faculty far outweighed the costs and problems.

56. Given my school's current situation, the benefits for the students of any major curriculum change in the near future are highly unlikely to offset the costs and problems involved.

57. Given my school's current situation, the benefits for the faculty of any major curriculum change in the near future are highly unlikely to offset the costs and problems involved.

Please estimate the number of each of the following within two hours drive of your school. Circle your estimate on the response sheet.

58. Permanent institutions with curriculum specialists (colleges, universities, research institutes, etc.)

59. Temporary activities featuring curriculum specialists, not held at the institutions counted above (conventions, in-service training, major workshops, etc.)

60. Other school districts

THAT'S ALL THANKS

RESPONSE SHEET

BUILDING CLIMATE INVENTORY
FORM E

1. 1 2 3

_____

_____

4. ___ thru ___
or ungraded ____

1 2 3 4

6. 1 2 3 4

7. 1 2 3 4

1 2 3 4

1 2 3 4

10. 1 2 3 4

11. 1 2 3 4

_____

_____

14. _____

_____

_____

_____

18. _____

1 2 3 4 5

1 2 3 4 5

21. 1 2 3 4 5

22. 1 2 3 4 5

23. 1 2 3 4 5

24. 1 2 3 4 5

25. 1 2 3 4 5

26. 1 2 3 4 5

27. 1 2 3 4 5

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32. 1 2 3 4 5

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48. 1 2 3 4 5

49. 1 2 3 4 5

50. 1 2 3 4 5

51. 1 2 3 4 5

52. 1 2 3 4 5

53. 1 2 3 4 5

54. 1 2 3 4 5

55. 1 2 3 4 5

56. 1 2 3 4 5

57. 1 2 3 4 5

58. none 1 2-4 5-10 11+

59. none 1 2-4 5-10 11+

60. none 1-5 6-10 11-20 21+

BUILDING CLIMATE INVENTORY
FORM S

Please circle the number or fill in the blank on the Response Sheet to indicate your response to each item.

1. Your position: 1 = Principal 2 = Teacher 3 = Other

2. Student population (approximate) of your building

3. Number of certified teachers in your building

4. Number of other instructional personnel (aides, etc.)

5. Building type: 1 = Sr Hi (9-12 or 10-12) 3 = Jr-Sr Hi (7-12 or 6-12)
2 = Jr Hi (Middle School) 4 = Comprehensive (K-12)

---

6. On the reverse side of the Response Sheet are listed the texts of the major National Science Foundation supported curricula in science and mathematics. If any of these are in use in your building, please indicate the approximate number of students using per year, and their degree of use (e.g., if only 15 out of 1,000 students use a text, but they use it heavily, the appropriate response would be: 15, High).

Texts not used in your building should be indicated as "Not Used".

Following are several means by which members of your building staff may have come in contact with one of the texts or programs listed on the Response Sheet. Please estimate the number of different people from your building who have come in contact with any of the programs by each of the following means.

7. College teacher training

8. National Science Foundation institutes

9. Short workshops (4 days or less)

10. Professional association meetings

11. Employment in another school

12. Professional literature

13. Access to tests and materials

All items call for your assessment of the conditions in your building or the opinions held by the building teaching and administrative staffs. ON QUESTIONS OF OPINION, PLEASE GIVE YOUR ESTIMATION OF THE GENERAL VIEWPOINT AMONG ADMINISTRATORS, SCIENCE, AND MATH TEACHERS, EVEN IF IT DOES NOT MATCH YOUR OWN PERSONAL OPINION.

Please describe the amount of contact and interaction between or among your building's teachers, administrators, etc., as indicated. Use the scale 1-5:

Virtually no contact or interaction	1	2	3	4	5	High degree of contact and interaction

14. Between building administrators and college or university curriculum specialists

15. Between building administrators and professional associations dealing with curriculum

16. Between building administrators and administrators of other buildings

17. Between building administrators and in-service programs

18. Between building administrators and commercial (e.g., publishers') curriculum specialists

19. Between science and math teachers and college or university curriculum specialists

20. Between science and math teachers and professional associations dealing with curriculum

21. Between science and math teachers and teachers in other buildings

22. Between science and math teachers and in-service programs

23. Between science and math teachers and commercial (e.g., publishers') curriculum specialists

24. Among building administrators

25. Among science and math teachers

26. Between administrators and teachers within the building

27. Between administrators and the community

28. Between science and math teachers and the community

Please indicate to what degree the following statements characterize your building. Use the scale 1-5:

Not at all characteristic	1	2	3	4	5	Highly characteristic

29. There is a well-defined "chain of authority" through which most intra-staff business is conducted.

30. Direct supervision of a staff member by his/her supervisor on a day-to-day basis is common.

31. Most science and math courses have explicit, well-defined objectives which serve as the basis for planning instruction.

32. All science and math curricula taught are subjected to pre-planned review and evaluation at regular intervals.

33. Science and math teachers plan and carry out their instructional programs relatively independently of other members of their department.

34. The science and mathematics departments work closely with each other to interlock and correlate their respective programs.

35. The extents and limits of individual teachers' responsibilities to the building and district are explicitly defined in writing.

Assuming a major curriculum change had been deemed desirable, please evaluate the capacity, on an average over the past five years, that your building would have had for receiving the change along the following dimensions. Use the scale 1-5:

Low capacity, many inhibitors	1	2	3	4	5	High capacity, few inhibitors

36. Physical plant (room size, utilities, storage space, etc.)

37. Administrative structure (class grouping, contractual obligations, state curricula, etc.)

38. Financial resources

39. Faculty

40. Students

41. Community support

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42. When major new curriculum materials are to be chosen, which best describes the selection process as it operates in your situation:

1 = Selection by teachers with little administrator input
2 = Selection by teachers with considerable administrator input
3 = Selection jointly by teachers and administrators, roughly equal input
4 = Selection by administrators with considerable teacher input
5 = Selection by administrators with little teacher input

Please describe the degree to which you feel the following statements reflect the general OPINIONS AND ATTITUDES OF YOUR BUILDING'S SCIENCE AND MATH STAFF. Use the scale 1-5:

Does not reflect building opinion	1	2	3	4	5	Reflects building opinion

43. Outside ideas on curriculum are often extremely important in improving the school's program.

44. It is the school's responsibility to actively seek outside ideas on curriculum.

45. The school should be willing to take a fair degree of risk to improve its curriculum.

46. Any major "curriculum package" should be used as is and not modified at the local level.

47. A school can often improve its curricula by using internal resources only.

48. Most outside curriculum specialists who come in contact with school staff have a highly realistic understanding of the school's capabilities, objectives, and limitations.

49. When past major curriculum adoptions are considered, on the whole the benefits and improvements realized by the students far outweighed the costs and problems.

50. When past major curriculum adoptions are considered, on the whole the benefits and improvements realized by the faculty far outweighed the costs and problems.

51. Given my school's current situation, the benefits for the students of any major curriculum change in the near future are highly unlikely to offset the costs and problems involved.

52. Given my school's current situation, the benefits for the faculty of any major curriculum change in the near future are highly unlikely to offset the costs and problems involved.

Please estimate the number of each of the following located within two hours' drive of your school. Circle your estimate on the Response Sheet.

53. Permanent institutions with science or math curriculum specialists (colleges, universities, research institutes, etc.)

54. Temporary activities this year featuring science or math curriculum specialists, not held at the institutions counted above (conventions, in-service training, workshops, etc.)

55. Other school districts

THAT'S ALL THANKS

RESPONSE SHEET

BUILDING CLIMATE INVENTORY
FORM S

1. 1 2 3	20. 1 2 3 4 5	39. 1 2 3 4 5
2. _____	21. 1 2 3 4 5	40. 1 2 3 4 5
3. _____	22. 1 2 3 4 5	41. 1 2 3 4 5
4. _____	23. 1 2 3 4 5	42. 1 2 3 4 5
5. 1 2 3 4	24. 1 2 3 4 5	43. 1 2 3 4 5
6. (on back)	25. 1 2 3 4 5	44. 1 2 3 4 5
7. _____	26. 1 2 3 4 5	45. 1 2 3 4 5
8. _____	27. 1 2 3 4 5	46. 1 2 3 4 5
9. _____	28. 1 2 3 4 5	47. 1 2 3 4 5
10. _____	29. 1 2 3 4 5	48. 1 2 3 4 5
11. _____	30. 1 2 3 4 5	49. 1 2 3 4 5
12. _____	31. 1 2 3 4 5	50. 1 2 3 4 5
13. _____	32. 1 2 3 4 5	51. 1 2 3 4 5
14. 1 2 3 4 5	33. 1 2 3 4 5	52. 1 2 3 4 5
15. 1 2 3 4 5	34. 1 2 3 4 5	53. none 1 2-4 5-10 11+
16. 1 2 3 4 5	35. 1 2 3 4 5	54. none 1 2-4 5-10 11+
17. 1 2 3 4 5	36. 1 2 3 4 5	55. none 1-5 6-10 11-20 21+
18. 1 2 3 4 5	37. 1 2 3 4 5	
19. 1 2 3 4 5	38. 1 2 3 4 5	

Subscale Key

Factor	Items	
	Form E	Form S
Linkage	19-3	14-28
Structure	34-40 (38 rev scored)	29-35 (33 rev scored)
Capacity	41-46	36-41
Openness	48-52 (51 rev scored)	43-47 (46 rev scored)
Reward	54-57 (56,57 rev scored)	49-52 (51,52 rev scored)
Proximity	53, 58-60	48, 53-55
Synergy	12-18	7-13